Clean Watersheds Needs Survey 2008 Guide for Entering Stormwater Management Program (Category VI) Needs

In Clean Watersheds Needs Survey (CWNS) 2004, twenty-eight states and the District of Columbia reported needs in category VI, Stormwater Management Program. To increase participation in 2008, a new web-based data entry system will be used. The system will allow local users (e.g. municipalities) and multiple state users (e.g. state stormwater coordinators entering strom water needs) to submit CWNS data to their State CWNS coordinator electronically.

Based on some state's experiences from CWNS 2004, the following provides resources, methodologies, and best practices for collecting and entering stormwater needs and costs information into the CWNS 2008 system. If you would like to propose other methodologies for documenting needs and costs in CWNS 2008, contact EPA (cwns@epa.gov) as early as possible. EPA will review methodologies proposed by states from February- April 2008.

Getting Started

- Identify communities in your state that are regulated by National Pollutant Discharge Elimination System (NPDES) permits for discharges from municipal separate storm sewer systems (MS4).
- Identify and coordinate with state NPDES program staff.

Eligibility Requirements

To be eligible for CWNS, needs must be:

- Capital costs, with the exception of Stormwater Plan Development costs
- Fall within one of the CWNS categories
- Meet the CWNS documentation criteria

Stormwater is defined as runoff water resulting from precipitation. Category VI includes the capital costs to plan and implement municipal stormwater management programs. These include structural and nonstructural measures that control stormwater pollution from diffuse sources by:

- Reducing pollutants from runoff from commercial and residential areas that are served by the storm sewer
- Detecting and removing illicit discharges and improper disposal into storm sewers
- Monitoring pollutants in runoff from industrial facilities that flow into municipal separate storm sewer systems
- Reducing pollutants in construction site runoff discharged to municipal separate storm sewers

Stormwater Program Management needs may be reported for Phase I municipalities, Phase II municipalities, non-traditional MS4s[1], and unregulated communities in the following sub-categories:

[1] Includes regulated MS4s owned by non-municipal, public entities, such as universities, Departments of Transportation, prisons, school districts, etc.

- **VI-A: Traditional Stormwater Conveyance Infrastructure**, includes the planning, design, and construction/purchase costs associated with pipes, inlets, road side ditches, etc.
- **VI-B: Traditional Stormwater Treatment Systems**, includes the planning, design, and construction/purchase costs associated with wet ponds, dry ponds, manufactured devices, etc.
- **VI-C: Green Infrastructure/Low Impact Development (LID) Stormwater Treatment Systems**, includes the planning, design, and construction/purchase costs associated with bioretention, constructed wetlands, permeable pavement, rain gardens, green roofs, cisterns, rain barrels, vegetated swales, restoration of riparian buffers and flood plains, etc.(Both public and private)
- **VI-D: General Stormwater Management**, includes the planning, design, and construction/purchase costs associated with GIS and tracking systems, equipment (e.g., street sweepers, vacuum trucks, etc.), stormwater education program start-up costs (e.g., setting up a stormwater public education center, building a traveling stormwater education display), and stormwater management plan development.

Capital projects to address primarily water quality-related needs are eligible for CWNS 2008. Projects with integrated water quality and water quantity benefits are also permitted, if the primary purpose is water quality. For these projects, it is no longer necessary to remove the water quantity portion of the needs.

To keep the data in the CWNS consistent and credible, as well as comparable across the country, all needs and costs documentation must include (See attachment 2 for a list of documents that can be used):

1. **A description of the water quality or public health problem or threat**.
2. **The location of the problem.** The location must be identified using one of the following methods[2]**:**

    a. For each Stormwater Management Project, a single latitude/longitude point representing the centroid of the project is required.
    b. A polygon(s) outlining the area where the stormwater needs are located (primarily applicable to categories VI-C and VI-D). A tool for drawing an electronic map is available within the data entry system.
    c. The name of the town or county, If the stormwater management area applies to a complete town or county.

3. **The solution to the problem**. One or more specific pollution control measures or Best Management Practices (BMPs) to address the water-quality problem need to be identified.
4. **The cost for each solution.** pecific costs are needed for each proposed solution.
5. **The basis of the cost.** The source of the cost data (e.g., engineer's estimates, costs from comparable practices) for each solution must be identified.
6. **The total cost.** This is the total cost of all costs documented for the location.

[2] Stormwater management needs location data requirements will only be enforced in 2008 for new projects and projects that require redocumentation of needs.

7. **Current documentation.** The documentation provided must of be dated no earlier than January 1, 1998 for projects with needs greater than $20 Million and no earlier than January 1, 1994 for projects with needs less than $20 Million.

Best Practices for Documenting Stormwater Management Program Needs and Costs

Note: Communities with a population of fewer than 10,000 people are considered small communities and can use a simplified methodology to collect and document needs. For more information, see the CWNS 2008 Guide for Entering Small Community Needs available at http://www.epa.gov/cwns/cwns2008.htm

To successfully report stormwater needs, the state CWNS coordinator needs to communicate effectively and work cooperatively with decentralized program staff at the state, regional, or municipal level.

CWNS 2004 Examples

Several states stressed that cooperating with NPDES program staff was essential. NPDES program staff provided access to all the MS4 permits in the state. Based on the permit information, the state coordinators were able to record the unmet needs for each MS4 community.

Wisconsin documented needs and costs using grant applications from their Urban Nonpoint Source and Storm Water Planning Program. The applications documented required CWNS data including: a map of the site, the water quality needs, how the project will provide pollution control, a financial budget and narrative cost estimate, and signature of a local official. Applications for grants that are not funded as of January 1, 2008 are a good source of CWNS information.

Minnesota established a per-acre stormwater rate according to the Capital Improvement Plans (CIPs) of ten representative communities. Minnesota contacted the communities regarding stormwater management needs and budgets. The information acquired was used to develop an average annual per acre rate for stormwater management that was applied to the all communities subject to municipal separate storm sewer systems regulations. (See Attachment 1 for a detailed description.)

Additional Methodologies

Needs

The following documents have been used in previous survey to demonstrate water-quality or public-health threat related to stormwater management. Additional approved documents for justifying needs are listed in Attachment 2. It is possible to use other documents with pre-approval from EPA.

- A **Municipal Stormwater Management Plan** is a plan submitted as part of a municipality's NPDES stormwater permit application.

- **Impaired Water/Total Maximum Daily Load (TMDL) Listing** indicates that the waterbody exceeds pollutant limits and requires remediation. Facilities/projects can

use these listings to justify need when stormwater projects specifically address the pollutant causing the impairment. Users will directly link the projects/facilities to the database of impaired waters in the data entry system.

- A **TMDL** is an estimation of the maximum amount of a pollutant that an impaired waterbody can receive and still meet water quality standards. Facilities/projects can use these listings to justify need when stormwater projects specifically address pollutant reduction to meet the allowable pollutant discharge levels in the TMDL.

- **State-approved Area-Wide or Regional Basin Plan** are broad-based water quality management plans written primarily to identify future planning for areas within a state. Only plans that contain site-specific information and a description of a need may be accepted as documentation of need.

- The **Intended Use Plan (IUP)** is prepared annually and uses state-assigned criteria to rank projects for which federal funding assistance is being sought during the current federal fiscal year. The primary purpose of the IUP is to identify proposed annual intended uses of Clean Water State Revolving Fund. Stormwater projects listed on the IUP are considered to have needs.

- **A Watershed-based Plan** identifies the stressors and sources of water-quality problems in a watershed and outlines a management strategy for addressing these issues.

- **CWSRF and other loan and grant applications** that contain clearly written narrative that defines the specific project and the water quality or public health problem.

Costs

Estimate the cost based on previous comparable projects completed within the last two years. This estimate of cost must be based on the cost of recently bid or completed projects that are similar in size, scope, and geographic area (e.g., county, watershed) and for which detailed cost data are available. Costs are solution specific. For example, the cost of recently constructed wet ponds can be used to estimate the cost for wet ponds in planned development.

Other sources of cost data are outlined in Attachment 1. It is possible to use other documents with pre-approval from EPA.

Entering CWNS Data

Data entry for the next CWNS will be from February 5 through October 27, 2008. For the first time, an Internet-based data entry system will be used. State CWNS coordinators, other state personnel, municipalities, and other facilities and organizations will be able to submit CWNS data to their state CWNS coordinator electronically.

EPA will review innovative methodologies for documenting needs and costs in CWNS 2008 proposed by states. If you would like your proposed methodologies pre-approved, contact EPA (cwns@epa.gov) in February - April 2008.

For More Information

Visit http://www.epa.gov/cwns to learn more about the Clean Watersheds Needs Survey

- **Access data from previous surveys**
- **Find contact information for state and EPA regional CWNS coordinators at http://www.epa.gov/cwns/whereyoulive.htm**
- **Stay updated about CWNS 2008 at http://www.epa.gov/cwns/cwns2008.htm**

Sign-up to receive updates by e-mail by contacting cwns@epa.gov.

Attachment 1:
Example from Minnesota

Excerpted from a report provided by the Minnesota Pollution Control Agency entitled "PARTICIPTION IN THE 2004 CLEAN WATERSHED NEEDS SURVEY: MINNESOTA FINAL REPORT" (July, 2006)

NEEDS CATEGORY VI – STORMWATER MANAGEMENT

1. Acquisition of Data

For CWNS 2004 there was no available Minnesota Pollution Control Agency (MPCA) survey information of Minnesota communities describing stormwater management needs and costs. To develop reasonable estimates of stormwater management needs and costs MPCA proposed, and EPA/CWNS accepted the following:

a) Representative S-MS4 municipalities would be contacted regarding stormwater management needs and budgets and the information acquired would be used to develop an annual *per acre rate*[3] for S-MS4 stormwater management.

b) A list of S-MS4 communities subject to stormwater management regulations would be acquired from MPCA stormwater management staff.

c) The developed annual per acre rate would be applied to the list of S-MS4 communities for a period of ten (10) years.

Development of a per acre rate acceptable to EPA/CWNS required several iterations to ensure that the applicable municipal stormwater management needs and budgets where consistent with EPA/CWNS eligible cost criteria. Specifically stormwater management budgets needed to be carefully reviewed to exclude non-capital (i.e., operation and maintenance costs).

3. Documentation

To be accepted and included in CWNS, facility needs and cost estimates require documentation. The documentation type used for Category VI Stormwater Mgmt. was:

- Capital Improvement Plan (CIP).

In keeping with the methodology for identifying costs agreed to by EPA/CWNS and MPCA, annotated copies of stormwater management CIPs for the ten representative communities in the table below were forwarded to EPA/CWNS. The annotations to the CIPs documented and clarified which costs on the CIPs were CWNS eligible as agreed to in discussions and negotiations between EPA/CWNS and MPCA. The following table is a summary that indicates the communities and calculations used develop the per acre rate of $42.33 for Category VI Stormwater Management:

[3] The development and use of a per acre rate for stormwater costs was recognized as a useful innovation by EPA/CWNS. Prior stormwater rate development had depended on population. For a discussion of the advantages and disadvantages of per acre and per capita rates and a possible (and more precise) developed density rate see the Stormwater Management Section of Lessons Learned.

Name of Community	*Storm Water Annual CIP Costs*	*Area in Acres*	*Annual Stormwater CIP Costs $/acre*	2003 Population
Apple Valley	$193,200	11,342.15	17.03	48,418
Bloomington	$2,068,000	24,541.78	84.26	85,301
Chanhassen	$875,000	14,642.58	59.76	21,600
Eden Praire	$957,400	22,524.81	42.50	59,325
Edina	$136,000	10,256.24	13.26	48,156
Golden Valley	$274,000	6,727.10	40.73	20,736
New Hope	$247,121	3,266.89	75.64	20,910
Plymouth	$289,670	22,590.14	12.82	70,238
Richfield	$350,000	4,523.77	77.31	34,502
Woodbury		22,772.27	-	49,329
Total	**$5,390,391**	**143,187.73**		**458,515**
		Sum of 10 Rates:	**423.31**	
		Average of 10 rates:	**42.33**	

A second table, listing the 187 SMS4 CWNS Facilities (i.e. communities) and including area in acres was used in conjunction with the acre-rate table to determine the eligible Category VI costs of each community ((*2004 CWNS Appendix VI: Table 8).* All of the 187 communities where assigned documentation type "1 – Capital Improvement Plan" in the CWNS database. The forwarding of copies of the acre-rate table, the list of SMS4s and the Stormwater Management CIPs of the ten representative communities fulfilled the documentation requirements for CWNS 2004 Stormwater Management.

4. Lessons & Recommendations

CWNS 2004 developed a per/acre rate for 10 year stormwater management by reviewing the stormwater capital improvement budgets of ten representative communities. This per/acre rate was then applied to a total of 192 small MS4 regulated communities.

With updates and modifications, and subject to EPA approval, the per/acre approach described above may be reused for CWNS 2008. However, a significant improvement for CWNS 2008 would be to conduct a statewide survey of stormwater costs. A comprehensive survey approach would provide a more comprehensive and accurate accounting of stormwater management needs for CWNS 2008 and for assessing the comparative financial impact of stormwater management costs on municipalities relative to future wastewater needs and TMDLs.

Attachment 2:
Documentation

The following documents may provide the necessary documentation for Stormwater Management needs and costs. Stormwater needs and costs may be documented using other methods with pre-approval from EPA.

Document Type	**Can the document be used to justify…**	
	Needs?	**Costs?**
303(d) Listed Water	Yes	No
Cost of Previous Comparable Construction	No	Yes
CWSRF Loan Applications	Yes	Yes
National Estuary Program Comprehensive Conservation and Management Plan	Yes	No*
Intended Use Plan	Yes	Yes
Municipal Stormwater Management Plan	Yes	No*
New Municipal, State or Federal Regulation	Yes	No
Non-governmental Grant Applications	Yes	Yes
Nutrient Criteria Studies	Yes	No
State and Federal Loan and Grant Applications	Yes	Yes
State Needs Surveys & other State forms	Yes	No*
State-Approved Area-wide or Regional Basin Plan	Yes	Yes
State-Approved Local Comprehensive Water and Sewer Plan	Yes	Yes
Total Maximum Daily Load (TMDL)	Yes	No*

* With exceptions